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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,975	08/13/2002	Thomas L Ritzdorf	SEMT118781	6706

26389 7590 06/16/2005

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EXAMINER

LEADER, WILLIAM T

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/088,975	Applicant(s) RITZDORF ET AL.	
	Examiner William T. Leader	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 24-26 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-26 and 28-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt of the papers filed on March 31, 2005, is acknowledged. Claims 23 and 27 have been canceled. Claims 1-22, 24-26 and 28-31 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1-5, 11, 13, 14, 22, 24-25 and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Anthony (4,396,467) for the reasons given in the previous office action and in view of the following comments.
4. Claims 1, 8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Carey et al (5,219,787) for the reasons given in the previous office action and in view of the following comments.

Claim Rejections - 35 USC § 103

5. Claims 6, 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony for the reasons given in the previous office action and in view of the following comments.
6. Claims 15-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthony in view of Creutz (3,770,598) and Sonnenberg et al (5,223,118) for the reasons given in the previous office action and in view of the following comments.

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7. Claims 1, 3-7, 11-14, 22, 25 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey et al (5,219,787) in view of Anthony (4,396,467) for the reasons given in the previous office action and in view of the following comments.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey et al in view of Harrover, Jr. (2,853,443) or Jernstedt (2,451,341) for the reasons given in the previous office action and in view of the following comments.

9. Claims 15-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey et al in view of Creutz and Sonnenberg for the reasons given in the previous office action and in view of the following comments.

Response to Arguments

10. Applicant's arguments have been carefully considered but are not deemed to be persuasive. At page 8 of the Remarks, applicant argues that Anthony relates to electroforming which is distinct from electroplating. This argument is not convincing. Electroforming is a branch of electroplating technology. See the Lowenheim text, *Electroplating*, page 6. The Anthony process is directed to the deposition of metal on the surface of a semiconductor workpiece which defines a plurality of recesses. This is the same process recited by applicant.

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11. With respect to Carey et al applicant points out that the process of claim 1 reverses the electroplating power to control the deposition of further metal ions over the recessed microstructures and argues that Carey et al teaches that reverse pulse plating can be used to remove deposited metal ions, not to control the deposition of further metal ions. This argument is not persuasive. The operative step recited in claim 1 is the same step disclosed by Carey et al, i.e., reversing the electroplating power supplied between the anode and the exposed surface of the workpiece for at least a portion of a second time period. Contrary to applicant's argument, by modifying the contour of the initial deposit, Carey et al do control the deposition of further metal ions through the use of reverse current by improving the contour of the further deposit.

12. At page 10 of the Remarks, applicant argues that there is no reason why one skilled in the art would be motivated to combine the teaching relating to electroplating of Creutz and Sonnenberg et al with the teachings of Anthony. This argument is not convincing. The use of the compounds disclosed by the secondary references would have improved the properties of the deposited formed by Anthony in the manner taught by the secondary references.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William Leader
June 7, 2005


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700